

SITE: Florida Phosphate
BREAK: 17.8
OTHER: v-50

BRITTANY PLACE
BACKGROUND MONITORING PROJECT
FOR

DSMA ATCON LTD
4195 DUNDAS STREET WEST
TORONTO, ONTARIO, CANADA MBX 1Y4

MARCH 1985

BY THE POLK COUNTY HEALTH UNIT
ENVIRONMENTAL ENGINEERING

RADIOLOGICAL AND OCCUPATIONAL HEALTH SECTION

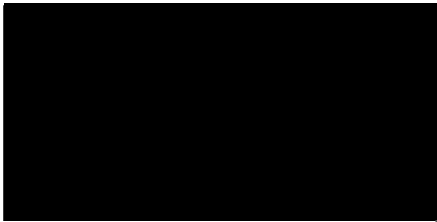
DONALD R. GUTHRIE, P.E.

INVESTIGATORS:

NORMAN M. GILLEY

J. WESLEY NALL

EDWARD L. FORGEY



DISTRICT SIX
POLK COUNTY PUBLIC HEALTH UNIT

DIRECT SERVICE UNITS

1755 HOLLAND PKWY., SOUTH
BARTOW, FLORIDA 33830111 NORTH 11TH STREET
HAINES CITY, FLORIDA 33844G.A. REICH, M.D., M.P.H.
DIRECTOR229 AVENUE D, N.W.
P.O. BOX 1480
WINTER HAVEN, FLORIDA
33882-1480

DIRECT SERVICE UNITS

1333 NORTH FLORIDA AVENUE
LAKE LAND, FLORIDA 33805305 WEST CENTRAL AVENUE
LAKE WALES, FLORIDA 33853RADIOLOGICAL AND OCCUPATIONAL HEALTH SECTION
813 294-7481 ext 283

September 9, 1985

Mr. Arthur Scott
American ATCOM
DSMA ATCOM, Ltd.
4195 Dundas Street, West
Toronto, Ontario, Canada M8X 1Y4

Mr. Scott

Enclosed are two copies of the requested sampling and analysis data of the radiological aspects of [REDACTED] and [REDACTED] of the Brittany Place Subdivision.

As per your request, an additional copy has been forwarded to the Florida Institute of Phosphate Research, Bartow, Florida.

Thank you for the opportunity to provide this service.

Sincerely,

A handwritten signature in black ink, appearing to read 'Norman M. Gilley'.

Norman M. Gilley
Health Physics Supervisor

ENC

DISTRICT SIX
POLK COUNTY PUBLIC HEALTH UNIT

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LAKE WALES, FLORIDA 33853RADIOLOGICAL AND OCCUPATIONAL HEALTH SECTION
813 294-7481 ext 283

September 9, 1985

Mr. Michael Lloyd
Chemical Processing
Florida Institute of Phosphate
Research
1855 West Main Street
Bartow, Fl 33830

RE: PROJECT #84-05-021

Mr. Lloyd:

Enclosed is a copy of the background analysis data requested by American ATCOM and performed by this agency. This data is to be used by American ATCOM within the scope of the Project 84-05-021 Demonstrate Construction of Radon Resistant Housing on Florida Phosphate Lands.

Mr. Arthur Scott, of ATCOM, requested that a copy of this report be forwarded to your agency. Please contact Mr. Scott for the disposition and further information about this report.

Sincerely,

A handwritten signature in black ink, appearing to read 'Norman M. Gilley'. The signature is fluid and cursive, with the first name 'Norman' being more prominent.

Norman M. Gilley
Health Physics Supervisor

ENC

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Lot [REDACTED]
Lot [REDACTED]
Lot [REDACTED]

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Flux Rate Measurements Layout, October 29, 1984

Lot [REDACTED]
Lot [REDACTED]
Lot [REDACTED]

Flux Rate Measurements Layout, November 30, 1984

Lot [REDACTED]
Lot [REDACTED]
Lot [REDACTED]

Table #3: Radium-226 Content in Soil Core Samples

Radium-226 Content in Soil Layout

Lot [REDACTED]
Lot [REDACTED]
Lot [REDACTED]

Laboratory Analysis Quality Assurance

INTRODUCTION

The data presented in this report was prepared for DSMA ATCON Ltd. by the Radiological Health Section, Environmental Engineering Division, Polk County Health Unit. The procedures used for sampling and analysis were those of the EPA Eastern Environmental Radiation Facility, Office of Radiation Programs and of the DOE Environmental Measurement Laboratory. Laboratory quality control followed the EPA publication EPA-600/7-77-088, Handbook for Analytical Quality Control in Radiochemical Laboratories.

The purpose of this sampling, laboratory preparation, and analysis was to characterize the radiological content of the soil strata of three home building lots in the Brittany Place Subdivision, Bartow, Fl. DSMA ATCON is to utilize this data within the scope of a Florida Institute of Phosphate Research Project: Demonstrate Construction of Radon Resistant Housing of Florida Phosphate Lands (84-05-021). This data should provide radiological background information prior to the construction of the three demonstration homes. Specific building techniques will then be applied during the construction phase of these homes to demonstrate that radon resistant homes may indeed be possible.

By comparing this data with other similar data collected by this agency and the U.S. E.P.A., one may conclude that a conventionally built home on these lots should exhibit indoor radon Working Level measurements (WL) in excess of the proposed Florida Regulation of 0.020 WL or 20 milliWL. See Table 1. Therefore this demonstration project should provide useful information concerning alternatives to the restriction of home building on reclaimed lands.

WHOLE BODY EXPOSURE MEASUREMENTS
IN MICROROENTGENS PER HOUR

LOT [REDACTED]

16.5	16.0	16.5	17.0
16.0	16.5	16.5	17.0
16.0	15.5	18.0	17.0
16.5	15.0	15.5	15.0
15.0	14.0	14.5	16.0

[REDACTED] BARTOW, FL

WHOLE BODY EXPOSURE MEASUREMENTS
IN MICROROENTGENS PER HOUR

LOT [REDACTED]

17.2	16.9	16.8	16.6
16.8	16.3	16.4	16.0
16.8	16.4	16.7	15.2
15.2	17.4	17.3	13.9
16.2	23.8	15.9	14.8

[REDACTED] BARTOW, FL

WHOLE BODY EXPOSURE MEASUREMENTS
IN MICROROENTGENS PER HOUR

LOT [REDACTED]

16.6	16.6	16.7	15.3	15.3
16.0	16.4	18.0	15.1	15.3
15.2	17.6	17.0	15.5	14.6
13.9	17.1	14.3	15.0	14.8
14.8	12.6	12.3	12.5	13.6

[REDACTED] [REDACTED] BARTOW, FL

Table 1: MEASURED FLUX RATES AND INDOOR
WORKING LEVELS DATA

<u>Location</u>	<u>Rn-Flux Becquerels Per Meter² Per Second</u>	<u>Measured Indoor mWL</u>
EPA 70076 Bartow	Average 141 Range 5-233	Average 27.8 Range ± 7.0
EPA 70080 Bartow	Average 40 Range 5-105	Average 34.9 Range ± 11.0
Brittany Place [REDACTED]	Average 177 Range 11-338	Expected to exceed .20
Brittany Place [REDACTED]	Average 159 Range 30-259	Expected to exceed .20
Brittany Place [REDACTED]	Average 67 Range 26-174	Expected to exceed .20

Table 2: SOIL MOISTURE DURING FLUX MEASUREMENT
SAMPLING PERIODS

<u>October 19, 1984</u>	<u>November 30, 1984</u>
[REDACTED] 10.6%	[REDACTED] 15.2%
[REDACTED] 7.6%	[REDACTED] 15.2%
[REDACTED] 3.6%	[REDACTED] 17.8%

RADON FLUX RATE MEASUREMENTS
millIBECQUERELS PER METER SQUARED PER SECOND
OCTOBER 29, 1984



96	33	178	156
22	144	207	196
215	174	96	152



BARTOW, FLORIDA

RADON FLUX RATE MEASUREMENTS
millIBECQUERELS PER METER SQUARED PER SECOND
OCTOBER 29, 1984



185	344	30	122
259	133	193	41
100	122	100	67



BARTOW, FLORIDA

RADON FLUX RATE MEASUREMENTS
millIBECQUERELS PER METER SQUARED PER SECOND
OCTOBER 29, 1984



33	41	141	37
41	30	37	26
30	30	37	33



BARTOW, FLORIDA

RADON FLUX RATE MEASUREMENTS
milliBECQUERELS PER METER SQUARED PER SECOND
NOVEMBER 30, 1984



107	256	174	316
196	156	279	193
241	137	130	338



BARTOW, FLORIDA

RADON FLUX RATE MEASUREMENTS
millIBECQUERELS PER METER SQUARED PER SECOND
NOVEMBER 30, 1984



137	316	81	207
107	LOST	248	126
207	203	119	133



BARTOW, FLORIDA

RADON FLUX RATE MEASUREMENTS
millIBECQUERELS PER METER SQUARED PER SECOND
NOVEMBER 30, 1984



74	111	174	56
93	119	100	74
89	74	67	63



BARTOW, FLORIDA

Table 3: RADIUM 226 CONTENT IN SOIL CORE SAMPLES
BECQUERELS PER KILOGRAM

Composited Six Foot Cores

A 196
B 207
C 548
D 430

One Foot Increment Cores

0 - 1' 226
1 - 2' 430
2 - 3' 141
3 - 4' 130
4 - 5' 319
5 - 6' 130

Composited Six Foot Cores

A 293
B 367
C 193
D 548

One Foot Increment Cores

0 - 1' 296
1 - 2' 581
2 - 3' 804
3 - 4' 226
4 - 5' 156
5 - 6' 644

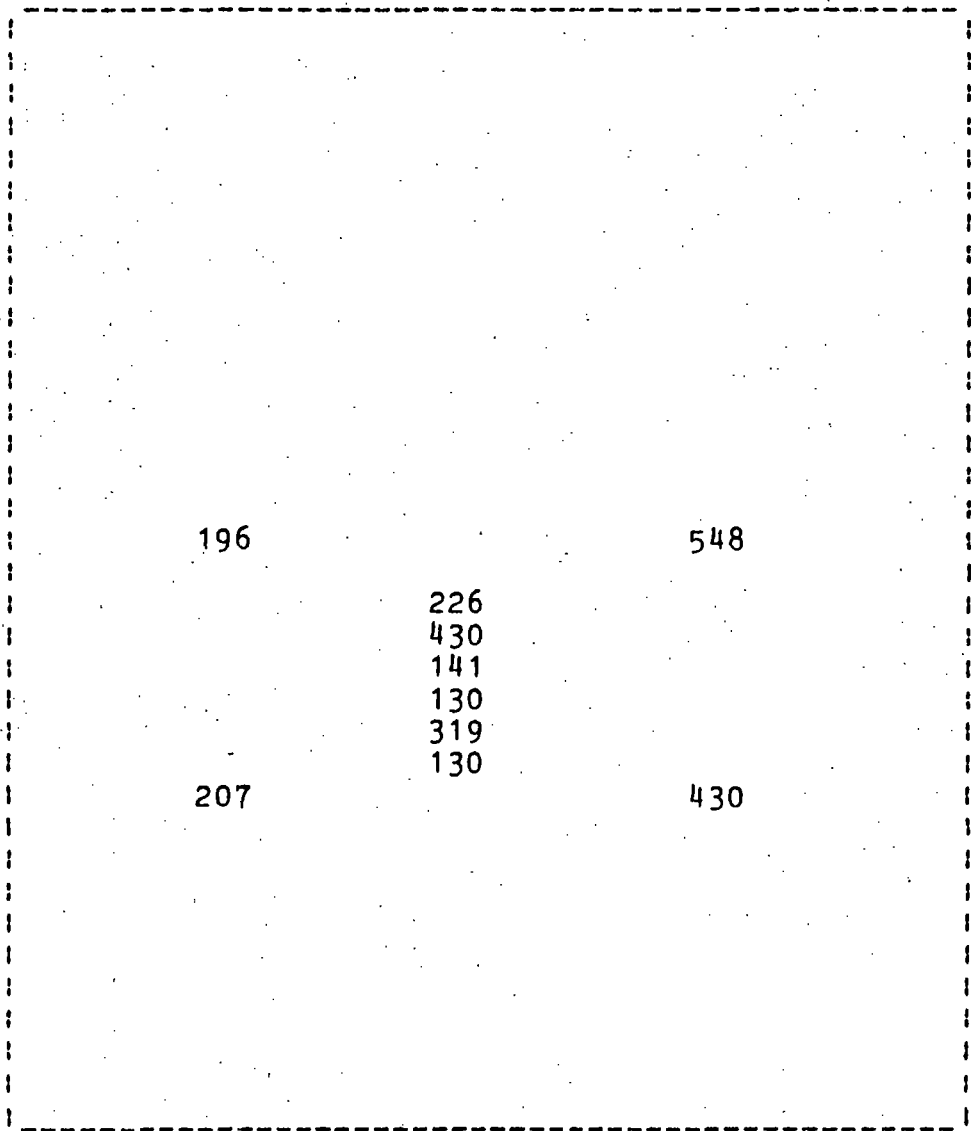
Composited Six Food Cores

A 185
B 156
C 133
D 159

One Foot Increment Cores

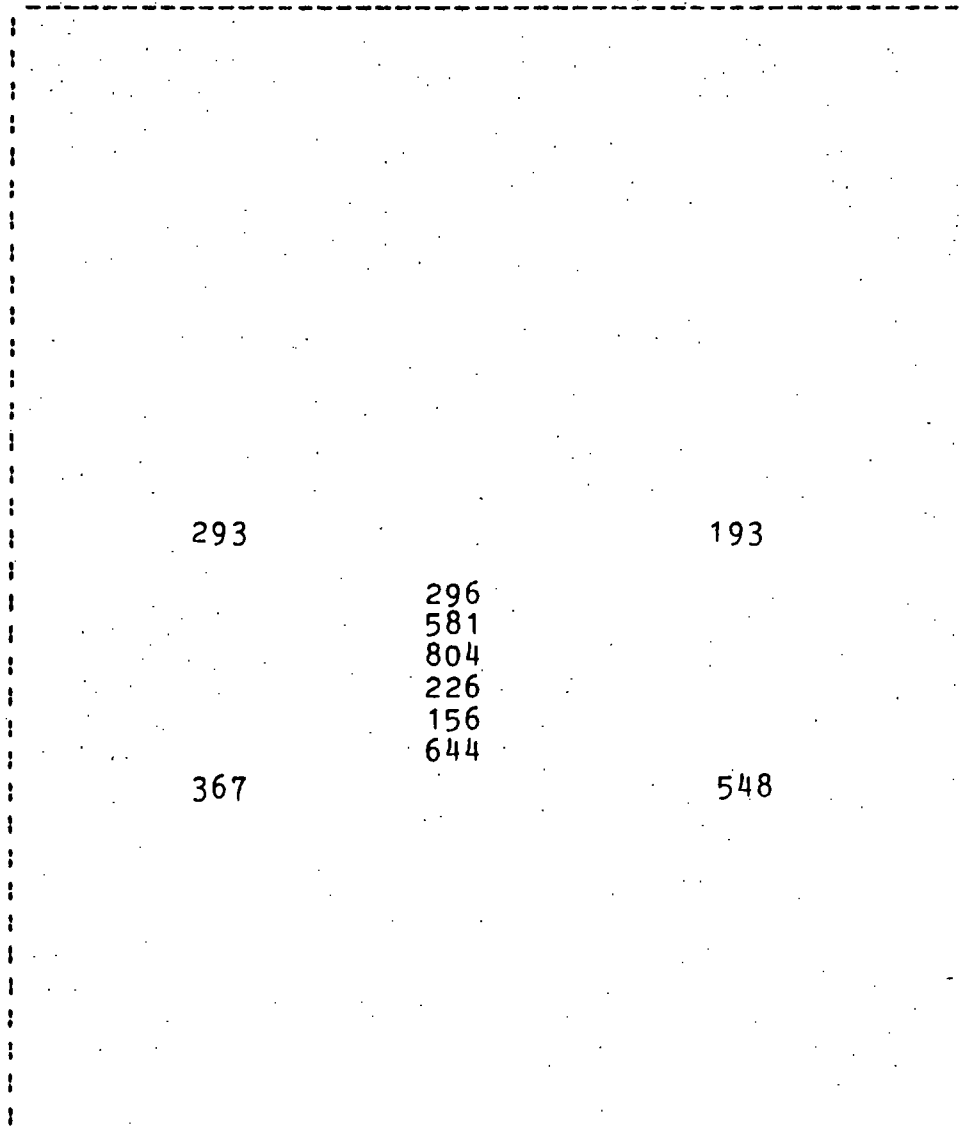
0 - 1' 252
1 - 2' 109
2 - 3' 81
3 - 4' 115
4 - 5' 100
5 - 6' 63

RADIUM-226 CONTENT IN SOIL
BECQUERELS PER KILOGRAM
IN DRY SOIL SAMPLES



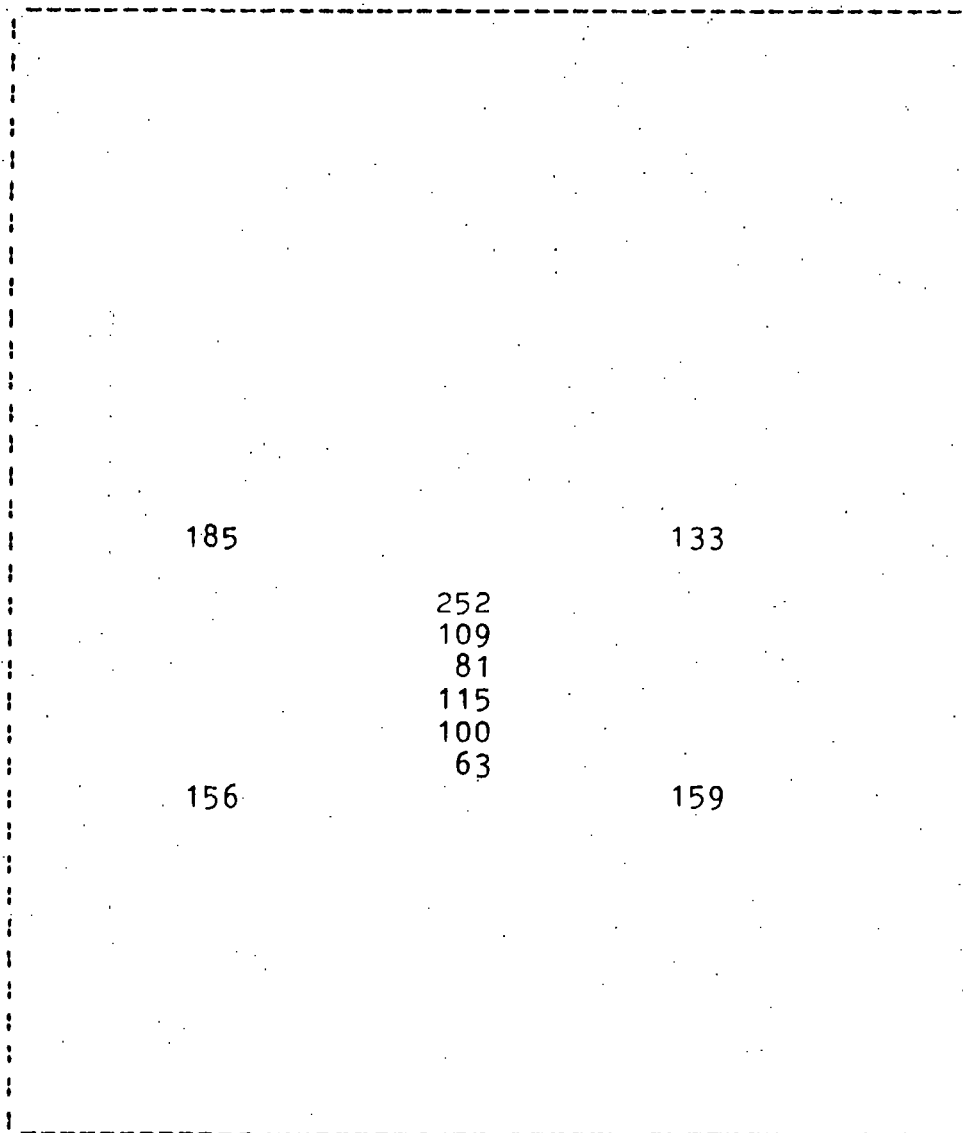
BARTOW, FLORIDA

RADIUM-226 CONTENT IN SOIL
BECQUERELS PER KILOGRAM
IN DRY SOIL SAMPLES



BARTOW, FLORIDA

RADIUM-226 CONTENT IN SOIL
BECQUERELS PER KILOGRAM
IN DRY SOIL SAMPLES



BARTOW, FLORIDA

LABORATORY ANALYSIS QUALITY ASSURANCE

During the processing of the samples, normal laboratory procedures were followed with respect to quality assurance. The electronic counting equipment used for the Ra-226 determinations were Lucas Cell Scintillation Counters. An overnight background count was made for each Lucas Cell and counter prior to its use. A standard check source was regularly used in each counter to insure reliability. Ra-226 calibration standards are prepared and analyzed quarterly to determine the calibration constant for each scintillation counter system.

The quality assurance system used demonstrates precision and reproducibility. For internal quality assurance, every tenth sample is analyzed in duplicate. After every twenty samples, a "spike" sample is analyzed to demonstrate accuracy. This is accomplished by adding a known concentration of a nuclide to a regular sample, and also analyzing the regular sample without the spike and comparing the results. Also on the schedule of every twenty samples (offset ten from the spike routine), a "blank" (distilled water sample) is analyzed to demonstrate that no contamination is occurring in the analytical procedures.

For external quality assurance, the laboratory participates in the Environmental Radioactivity Laboratory Intercomparison Studies Program sponsored by the U.S. Environmental Protection Agency. This agency provides, on a regular basis throughout the year, samples containing specific radionuclides for analysis. Also, blind samples are distributed twice yearly containing a mixture of nuclides for analysis. Following the reporting of our results to the EMSL, the known values and control limits are made known.

By participation in this ongoing intercomparison, this laboratory is certified by the State of Florida, D.H.R.S. for specific radionuclide analysis.

The following are the quality assurance sample results for those analyzed during the course of this project.

DUPLICATE SAMPLES

Sample Hole	1st Determination Bq/kg	2nd Determination Bq/kg
22A	207.0 \pm 3.7	203.0 \pm 3.7
24C	185.0 \pm 3.7	189.0 \pm 3.7
23E	804.0 \pm 3.7	874.0 \pm 3.7

SPIKED SAMPLES

Sample Analysis	Lot 24C (3-4 ft)	115.0 \pm 3.7 Bq/kg
Activity Added		181.0 Bq/kg
Total Activity Found		267.0 Bq/kg
Deviation from the Known		-0.8 S.D. (n-1)

BLANK SAMPLES

Below Detectable Limits

EMSL LV BLIND SAMPLES

PCHU Laboratory Results 104, 104, and 104 mBq/l
 Known Value 111 mBq/l
 Deviation from the Known Value -0.6 S.D. (n-1)

INTEROFFICE MEMO

TO: Donald R. Guthrie, PE Environmental Engineering
FROM: Norman M. Gilley, Radiological and Occupational Health *nmg*
SUBJECT: SERVICE TAGS/STICKERS, see attached memo

The service contract tags have been attached to the Radio Shack Model 16 B and the 15 Megabit hard disk drive as per instructions.

*Don G.
Please attach
to Equip.*

SEP 0 4 1985

NOTICE TO CUSTOMER

- A. THE ENCLOSED SERVICE AGREEMENT IS THE LEGAL DOCUMENT COVERING ALL ASPECTS OF SERVICE YOU ARE ENTITLED TO AND THE EXCLUSIONS (NOT COVERED). PLEASE KEEP IT IN A SAFE PLACE FOR EASY REFERENCE.
- B. ENCLOSED ARE SERVICE TAGS/STICKERS ASSIGNED TO YOUR SERVICE AGREEMENT. THEY MUST BE AFFIXED TO ALL PIECES OF EQUIPMENT COVERED UNDER YOUR SERVICE AGREEMENT IMMEDIATELY. NO EQUIPMENT WILL BE SERVICED UNLESS THE TAGS/STICKERS ARE AFFIXED. AFFIX THEM ON THE SMOOTH, BOTTOM SIDE OF ALL UNITS.

EXCEPTION: THE POWER SUPPLY IS AUTOMATICALLY COVERED WITH THE KEYBOARD AND DOES NOT REQUIRE A TAG/STICKER.

WARNING: YOU WILL DESTROY THE TAGS/STICKERS IF YOU ATTEMPT TO REMOVE THEM AFTER STICKING THEM ON THE EQUIPMENT. THIS COULD CAUSE A DELAY IN SERVICE.

- C. IF, FOR ANY REASON, YOU HAVE YOUR EQUIPMENT EXCHANGED, UP-GRADED, ETC., PLEASE NOTIFY US IMMEDIATELY. WE WILL NEED THE RADIO SHACK CATALOG NUMBER, THE SERIAL NUMBERS FROM YOUR "OLD" EQUIPMENT AND THE SERIAL NUMBERS FROM THE "NEW" EQUIPMENT. WE NEED THIS INFORMATION SO THAT WE MAY CONTINUE TO PROVIDE YOU WITH UNINTERRUPTED SERVICE.

DISTRICT SIX
POLK COUNTY HEALTH DEPARTMENT

DIRECT SERVICE UNITS

1755 HOLLAND PKWY., SOUTH
BARTOW, FLORIDA 33830111 NORTH 11TH STREET
HAINES CITY, FLORIDA 33844

WILLIAM F. HILL, JR., M.D.

DIRECTOR

P.O. BOX 1480
229 AVENUE D, N.W.
WINTER HAVEN, FLORIDA
33880

I N V O I C E

DIRECT SERVICE UNITS

1333 NORTH FLORIDA AVENUE
LAKELAND, FLORIDA 33801305 WEST CENTRAL AVENUE
LAKE WALES, FLORIDA 33853

December 28, 1984

TO: DSMA ATCON LTD
4195 Dundas Street West,
Toronto, Ontario,
Canada M8X 1Y4

ATTENTION: Mr. Arthur Scott

This is to bill you for soil samples (Soil Survey) taken on 3
lots at Brittany Place, Bartow, Florida per your purchase order
#1823/1328/01, issued on Oct. 11, 1984. Services have been performed
by the Polk County Health Unit and submitted to you.

THE TOTAL COST OF THE SERVICE IS \$4,657.00 (U.S. Currency)

Make check payable to the "POLK COUNTY HEALTH UNIT"

AMOUNT DUE \$4,657.00

Thank-You.

AMERICAN ATCON INC.

1105 NORTH MARKET STREET
P.O. BOX 1347
WILMINGTON, DELAWARE 19899

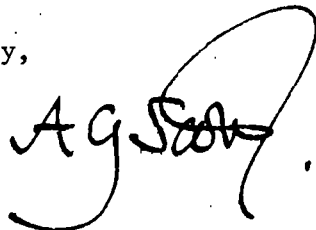
District Six,
Polk County Health Department,
P. O. Box 1480,
229 Avenue D. N.W.
Winter Haven, Florida
33880 U.S.A.

Attention: Mr. N. M. Gilley

Dear Sir:

Enclosed is a purchase order and cheque to pay for the measurements you carried out at Brittany Place. Could you please send a copy of the results to me c/o Florida Phosphate Research Institute in Bartow.

Your very truly,

A handwritten signature in dark ink, appearing to read 'A G Scott', with a large, sweeping flourish at the end.

Arthur G. Scott

AGS:bm
Encl.

1105 NORTH MARKET STREET
P.O. BOX 1347
WILMINGTON, DELAWARE 19899

PURCHASE ORDER

2046/1447/04

DATE

July 24th, 1985

AMERICAN ATCON INC.

TO: District Six,
Polk County Health Department,
P. O. Box 1480,
229 Avenue D. N. W.
Winter Haven, Florida
33880 USA

Attention: Donald R. Guthrie, PE

ENTER OUR ORDER FOR THE GOODS, MATERIALS AND/OR SERVICES AS LISTED BELOW AND IN ACCORDANCE WITH THE INSTRUCTIONS, TERMS AND CONDITIONS SET FORTH HEREUNDER.

ITEM NO.	QUANTITY	DESCRIPTION	UNIT PRICE		
		Soil survey on 3 lots at Brittany Place, Bartow Florida, per methodology in letter of Sept.19, 1984	\$4,657.00 U.S.		
DATE TO BE SHIPPED		SHIP TO	SHIP VIA	F.O.B. POINT	TERMS

THIS ORDER SHALL NOT BE BINDING UNTIL ACCEPTED. VENDOR SHALL SIGNIFY ACCEPTANCE BY SIGNING AND RETURNING TO PURCHASER, THE ACKNOWLEDGMENT AND ACCEPTANCE COPY HEREOF.

THE VENDOR AGREES TO ALL TERMS AND CONDITIONS STATED HEREIN INCLUDING SUCH TERMS AND CONDITIONS AS MAY BE STIPULATED IF ANY.

THIS ORDER SHALL CONSTITUTE THE COMPLETE AND FINAL AGREEMENT BETWEEN PURCHASER AND VENDOR AND NO OTHER AGREEMENT SHALL BE BINDING UPON THE PURCHASER UNLESS MADE IN WRITING AND SIGNED BY THE PURCHASER'S AUTHORIZED REPRESENTATIVE.

AUTORIZED REPRESENTATIVE

AMERICAN ATCON INC.

1105 NORTH MARKET STREET
P.O. BOX 1347
WILMINGTON, DELAWARE 19899

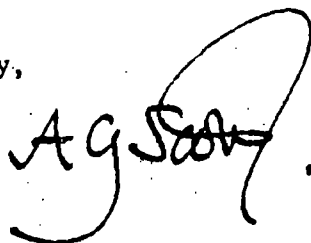
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Your very truly,



Arthur G. Scott

AGS:bm

THE TORONTO-DOMINION BANK		1-12/210 F	
THE TORONTO-DOMINION BANK 4198 BUNDAS ST. W. D. PRINCE EDWARD DR. 1344 TORONTO, ONTARIO		NO. 1344	-058107
PAY TO THE ORDER OF ----- POLK COUNTY HEALTH UNIT -----		July 26, 19 85	CANADA
AND CHARGE TO INTERNATIONAL CENTRE, TORONTO ACCOUNT.		U.S. \$ 4657.00	
TO CHEMICAL BANK INTERNATIONAL CENTRE 20 PINE STREET, NEW YORK, N.Y.		DOLLARS UNITED STATES CURRENCY AUTHORIZED OFFICER NUMBER 3243 COUNTERSIGNED	

1105 NORTH MARKET STREET
PO BOX 1347
WILMINGTON, DELAWARE 19899

PURCHASE ORDER

PURCHASE ORDER NO.
2046/1447/04

DATE
July 24th, 1985

AMERICAN ATCON INC.

TO: District Six,
Polk County Health Department,
P. O. Box 1480,
229 Avenue D. N. W.
Winter Haven, Florida
33880 USA
Attention: Donald R. Guthrie, PE

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		Soil survey on 3 lots at Brittany Place, Bartow Florida, per methodology in letter of Sept.19, 1984	\$4,657.00 U.S.

THE TORONTO-DOMINION BANK

1-12/210 F

THE TORONTO-DOMINION BANK
4194 BUNGAB ST. W.
4 PALMER EDWARD DR. 1344
TORONTO, ONTARIO

NO. 1344 -058107

July 26, 19 85
CANADA

PAY TO THE ORDER OF -----POLK COUNTY HEALTH UNIT----- U.S. \$4657.00

TOR-DOM * 4,657 and 00 cts
BANK

AND CHARGE TO INTERNATIONAL CENTRE, TORONTO ACCOUNT.

TO

CHEMICAL BANK
INTERNATIONAL CENTRE
20 PINE STREET, NEW YORK, N.Y.

DOLLARS
UNITED STATES CURRENCY

AUTHORIZED OFFICER NUMBER

COUNTERSIGNED

DATE TO BE SHIPPED	SHIP TO	SHIP VIA	F.O.B. POINT	TERMS

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[Signature]
AUTHORIZED REPRESENTATIVE

1105 NORTH MARKET STREET
PO BOX 1347
WILMINGTON, DELAWARE 19899

PURCHASE ORDER

PURCHASE ORDER NO
2046/1447/04

DATE
July 24th, 1985

AMERICAN ATCON INC.

TO: District Six,
Polk County Health Department,
P. O. Box 1480,
229 Avenue D. N. W.
Winter Haven, Florida
33880 USA Attention: Donald R. Guthrie, PE

ENTER OUR ORDER FOR THE GOODS, MATERIALS AND/OR SERVICES AS LISTED BELOW AND IN ACCORDANCE WITH THE INSTRUCTIONS, TERMS AND CONDITIONS SET FORTH HEREUNDER.

ITEM NO.	QUANTITY	DESCRIPTION	UNIT PRICE
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THE TORONTO-DOMINION BANK

1-12/210 F

THE TORONTO-DOMINION BANK
4194 BUNDAS ST. W.
B. JAMES EDWARD DR. 1344
TORONTO, ONTARIO

NO. 1344 -058107

July 26, 19 85
CANADA

PAY TO THE ORDER OF -----POLK COUNTY HEALTH UNIT----- U.S. \$4657.00

TOR-DOM
BANK \$4,657 and 00/100ths

AND CHARGE TO INTERNATIONAL CENTRE, TORONTO ACCOUNT

DOLLARS
UNITED STATES CURRENCY

TO

CHEMICAL BANK
INTERNATIONAL CENTRE
20 PINE STREET, NEW YORK, N.Y.

AUTHORIZED OFFICER NUMBER

COUNTERSIGNED

DATE TO BE SHIPPED

SHIP TO

SHIP VIA

F.O.B. POINT

TERMS

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[Signature]
AUTHORIZED REPRESENTATIVE

SYSTEM EFF: 0.21 CPM/PCI

RADON FLUX DATA SHEET

Polk County Health Department
Radiological Health Section

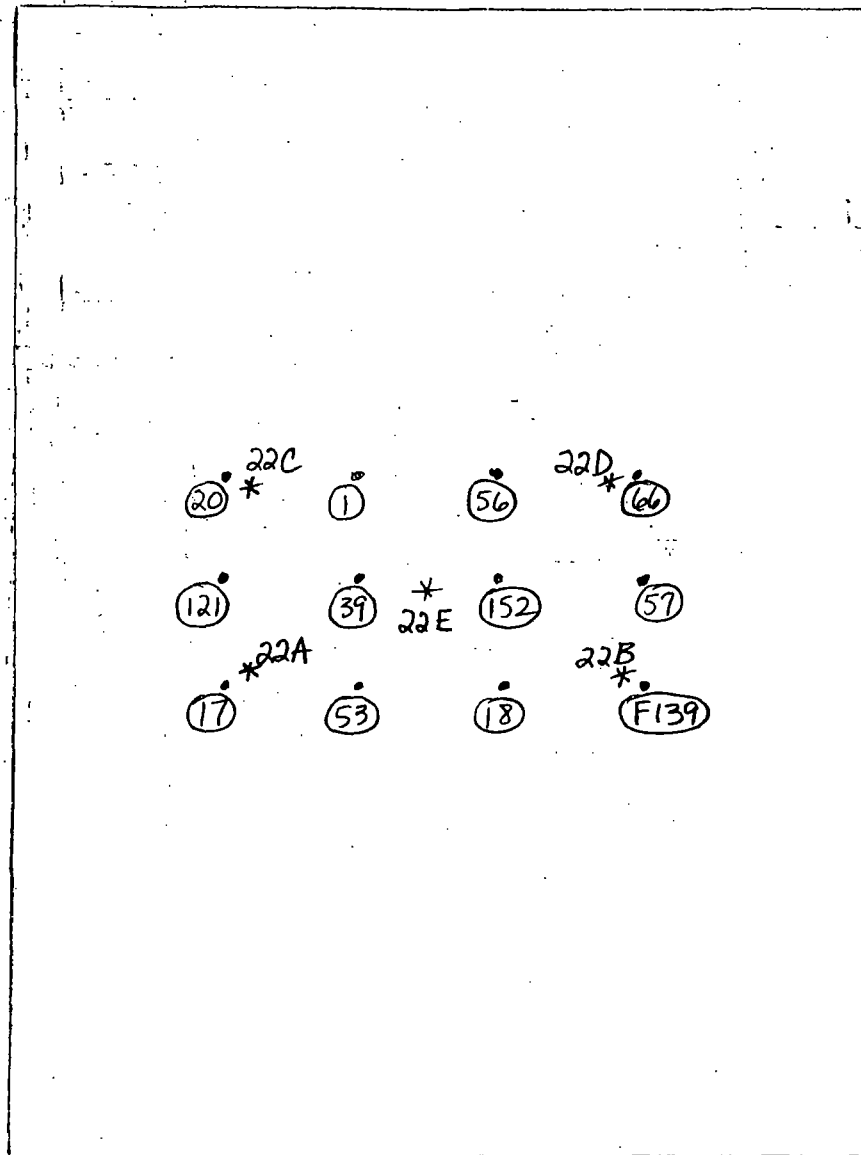
Deployed by W. Nall, L. Forgey
Retrieved by L. FORGEY

Analyzed by L. FORGEY

SAMPLE LOCATION	CANISTER NUMBER	DATE - TIME			NET CPM	222	REMARKS
		START	STOP	READ		Rn FLUX	
Brittany Place	F139	10-29-84 13:40	11-1-84 14:20	11-5-84 13:47	1018.2	5.8 $\mu\text{Ci/m}^2\text{-sec}$	348
	18	13:41	14:21	12:55	621.3	3.5 "	210
	53	13:43	14:22	14:04	649.9	3.7 "	222
	17	13:44	14:23	10:37	1156.5	6.5 "	390
	121	13:46	14:24	11:45	950.7	5.3 "	318
	39	13:47	14:25	9:31	773.9	4.2 "	252
	152	13:48	14:26	10:03	1348.7	7.4 "	444
	57	13:49	14:27	13:11	914.9	5.2 "	312
	66	13:51	14:28	8:59	1554.2	8.5 "	512
	56	13:52	14:29	9:15	863.3	4.7 "	282
	1	13:54	14:30	13:31	1228.9	6.9 "	414
	20	13:55	14:31	10:19	816.5	4.5 "	270
						347 \pm	112

COMMENTS: See reverse side for map.

10.6% moisture



(17) - Canister location
and number
22A
* - Core sample
location and
number
1" \cong 20'

DATE 11/5/84 11/2/84
SYSTEM EFF: 0.21 CPM/PCI

RADON FLUX DATA SHEET

Polk County Health Department
Radiological Health Section

Deployed by W. Wall, L. Forgey
Retrieved by L. FORGEY

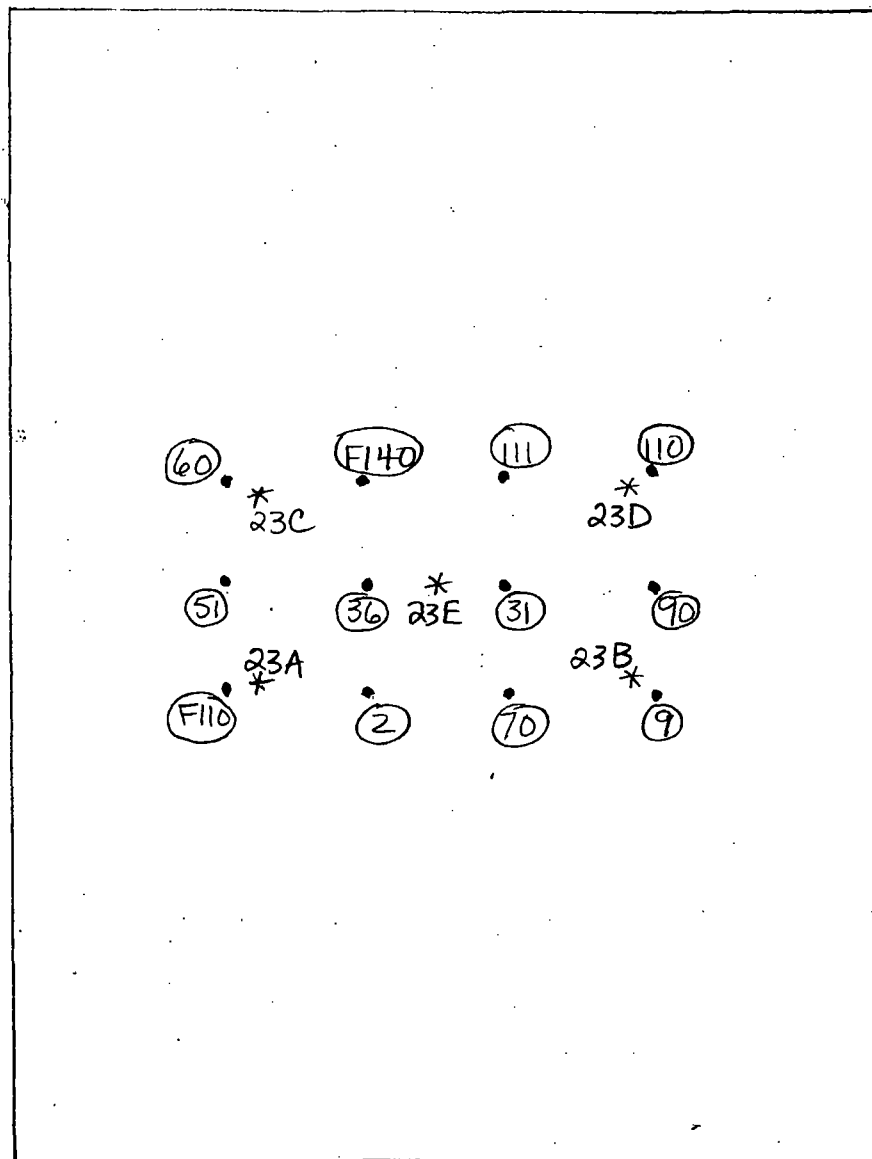
Analyzed by C. FORCEY

SAMPLE LOCATION	CANISTER NUMBER	DATE - TIME		READ	NET CPM	222		REMARKS
		START	STOP			Rn	FLUX	
Brittany Place	110	10-29-84 13:20	11-1-84 13:54	11-5-84 12:35	797.8	4.5	pl/line sec 220	
	111	13:22	13:55	11-2-84 9:30	703.3	2.2	"	132
	F140	13:23	13:56	11-2-84 14:14	2860.3	8.5	"	510
	60	13:24	13:57	11-2-84 11:30	1131.9	3.7	"	222
	90	13:26	13:58	11-5-84 12:17	599.1	3.4	"	204
	31	13:27	13:59	11-5-84 12:01	1200.0	6.7	"	402
	36	13:28	CANISTER MISSING					
	51	13:29	14:01	11-5-84 9:46	705.9	2.9	"	174
	9	13:31	14:02	11-5-84 10:53	655.7	3.6	"	216
	70	13:33	14:03	11-5-84 11:12	526.8	3.2	"	192
	2	13:35	14:04	11-5-84 11:28	984.3	5.5	"	330
	F110	13:38	14:05	11-5-84 9:47	1023.2	5.6	"	336

COMMENTS: See reverse side for map.

৯৭ ± ১১৩

7.6 % moisture



C1 [redacted] St.

② - Canister location and number

23A
* - Core sample location and number

1" \cong 20'

DATE 11-2-84

RADON FLUX DATA SHEET

Polk County Health Department

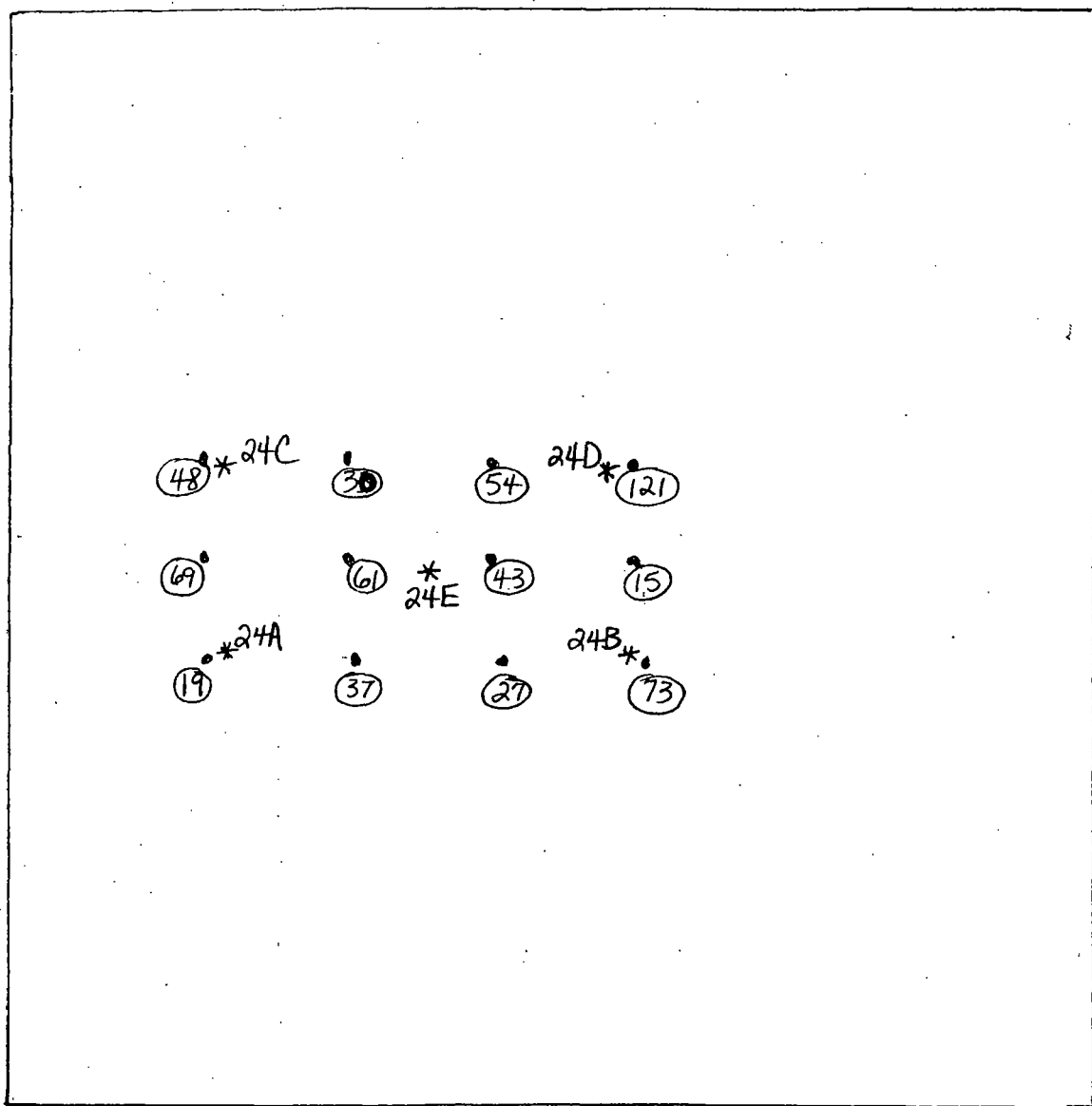
Deployed by W. Nall, L. Forgey
Retrieved by L. FORGEY

Analyzed by L. FORGEY

[illegible]

COMMENTS: See reverse side for map.

3.690



Clower St.

• - Cannister location
and number
*24C - Core sample
location and
number
1" \approx 20'

CAN #

Start Time

~~06:05~~

11/2/84

*4820

→

15,685

*BLANK

→

1,777

*SYSTEM
BACKGROUND50K SEC.
→

96,637

SHEP

142CBM

*2562

→

9,690

54 ——— 8:55 ——— 24,297 ✓

48 ——— 9:12 ——— 11,577 ✓

111 ——— 9:30 ——— 12,680 ✓

51 ——— 9:46 ——— 15,718 ✓

61 ——— 10:02 ——— 16,828 ✓

69 ——— 10:19 ——— 13,747 ✓

*1395

→

6,053

19 ——— 10:57 ——— 13,441 ✓

30 ——— 11:13 ——— 15,789 ✓

60 ——— 11:30 ——— 19,109 ✓

15 ——— 11:46 ——— 11,312 ✓

*755

→

4,302

37 ——— 12:20 ——— 11,264 ✓

43 ——— 12:36 ——— 14,318 ✓

101 ——— 12:53 ——— 2,076 ———

82 ——— 1:09 ——— 2,107 ———

73 ——— 1:25 ——— 10,038 ✓

121 ——— 1:42 ——— 9,140 ✓

27 ——— 1:58 ——— 10,305 ✓

F140 ——— 2:14 ——— 40,534 ✓

32 ——— 2:31 ——— 2,134 ———

63 ——— 2:48 ——— 2,063 ———

157 ——— 3:05 ——— 2,270 ———

}

2130

142k

<u>CAN #</u>	<u>START TIME</u>	<u>GCMs</u>
OPEN HOLE 161	8:42	253,325
66	8:59	25,443 ✓
56	9:15	15,080 ✓
39	9:31	13,738 ✓
F110	9:47	17,478 ✓
152	10:03	22,361 ✓
20	10:19	14,377 ✓
17	10:37	19,477 ✓
9	10:53	11,966 ✓
70	11:12	10,632 ✓
2	11:28	16,894 ✓
121	11:45	16,390 ✓
31	12:01	20,130 ✓
90	12:17	11,117 ✓
110	12:35	14,097 ✓
18	12:55	11,450 ✓
57	1:11	15,853 ✓
1	1:31	20,564 ✓
F139	1:47	17,403 ✓
53	2:04	11,878 ✓

* 4820	→	17,131
* 755	→	4,100
* 2562	→	9,592
* 1395	→	6,109
* BLANK	→	1,718

11/5/1

14208

PC/mv
SAC

655 — 661.8 KeV
 12,846 → 17K seconds

622 — 691
 622 — 691
 691 — 622
 70 chrs / 658

Ch 260 to 670

1,006,382 CTS
 27,000 sec

Ch 798 to 540

557
 634
 661

61
 88
 80

2124

3229.6 ne8m

354

91,332

91,505

53.83

→ 3229.6

9326 / 500 1.265

785/400

7820
PCI
1119 cpm
1001 cpm / 4820
PCI
602

1001

202

RADON FLUX DATA SHEET

Polk County Health Department
Radiological Health Section

Deployed by W. NALL, T. McNALLY
Retrieved by W. NALL, L. FORGEY

Analyzed by L. FORGEY

SAMPLE LOCATION	CANISTER NUMBER	DATE - TIME		READ	NET CPM	222 Rn FLUX		REMARKS
		START	STOP					
BRITAIN Place [REDACTED]	37	11-30-84 9:19	10:12 12-3-84	12-4-84 16:04	246.9	0.9	8.1/km ² -sec	54
	15	9:19	10:12	12-4-84 14:49	333.6	1.1	"	66
	33	9:19	10:16	12-4-84 14:16	230.2	0.8	"	48
	54	9:20	10:13	12-3-84 16:30	316.6	0.9	"	66
	101	9:20	10:13	12-4-84 15:05	246.5	0.8	"	60
	69	9:21	10:17	12-4-84 15:21	228.4	0.8	"	48
	3	9:21	10:14	12-3-84 15:56	1310.5	3.8	"	228
	F-146	9:22	10:14	12-5-84 13:36	258.7	1.0	"	60
	10	9:22	10:18	12-4-84 16:20	289.0	1.0	"	60
	F-140	9:23	10:15	12-4-84 15:41	292.3	1.0	"	60
	75	9:23	10:15	12-3-84 15:40	238.5	0.7	"	54
	8	9:23	10:18	12-4-84 14:33	251.1	0.9	"	54
						70 ± 50		

COMMENTS:

Moisture - 17.8%

37 ●

54

3

F-140 ●

15

101

● F-146

75

33 ●

69

10

● 8

clower

~~21~~

SYSTEM EFF:0.21

RADON FLUX DATA SHEET

Radiological Health Section

Retrieved by W. NALL, L. FORGEY

Analyzed by L. Forgy

[illegible]

COMMENTS:

Moisture = 15.2% wt. weight

18

F-133

71

12

31

F-139

53

132

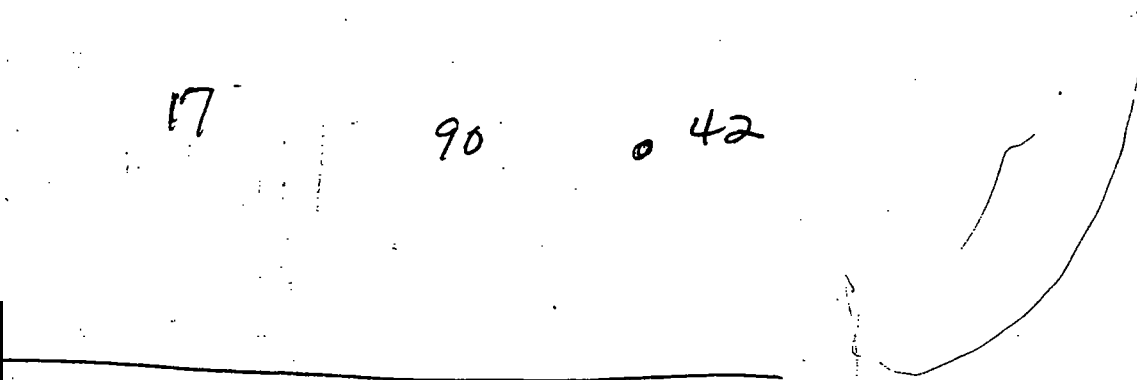
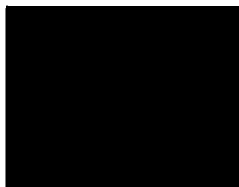
1

9-35

17

90

42



DATE 12/3/84-12/4/84-12/5/84
SYSTEM EFF: 0. 21 CPM/PCI

RADON FLUX DATA SHEET

Polk County Health Department
Radiological Health Section

Deployed by W. NALL, T. McNALLY
Retrieved by W. NALL, L. FORGEY

Analyzed by L. FORGEY

SAMPLE LOCATION	CANISTER NUMBER	DATE - TIME START STOP READ	NET CPM	Rn FLUX	REMARKS
BRITTANY PLACE	82 ⁴	11-30-84 10:19 9:24 12-3-84	16:46 12-3-84	1136.1	3.3 Rn flux sec 198
[REDACTED]	4 ⁵	9:24 10:19	12-5-84 11:42	269.3	1.1 " 60
	77 ²	9:25 10:23	12-5-84 11:22	441.5	1.8 " 108
	52 ³	9:25 10:20	12-4-84 12:38	251.1	0.8 " 48
	30 ⁷	9:26 10:20	12-5-84 11:05	1314.9	5.2 " 312
	60 ⁸	9:26 10:23	12-5-84 10:47	680.4	2.7 " 162
	13 ²	9:27 10:21	12-4-84 12:21	2784.4	9.3 " 558
	64 ⁶	9:27 10:21	12-4-84 11:48	1088.0	3.6 " 216
	40 ¹⁰	9:28 10:24	12-5-84 12:15	814.3	3.3 " 198
	6 ¹	9:28 10:22	12-4-84 12:04	1487.9	5.0 " 300
	22 ⁵	9:29 10:22	12-4-84 11:32	2115.5	7.0 " 420
	51 ⁹	9:29 10:24	12-5-84 11:59	679.6	2.7 " 162
					229 ± 148

COMMENTS:

Moisture - 15.2%

6 9 13 52 82

22 64 30 4

40 60 77
51

CLOWER

12-3-84

START TIME

GR/15min

GC/min

#75 -

15:40

5,632

375.47

#3

15:56

21,712

1447.47

#53

16:14

31,519

2101.27

#54

16:30

6,803

453.53

#82

16:46

19,095

1073.00

C-#70

2,005

133.67

C-#121

2,053

136.87

C-#57

2,086

139.07

C-#110

2,071

138.07

~~#1-#121~~

X (Avg 136.92)

12-4-84

#22

11:32

33,787

#64

11:48

18,374

#6

12:04

24,373

#13

12:21

43,820

#52

12:38

5,821

#12

12:55

20,828

#90

13:12

13,424

#1

13:28

27,750

#71

13:44

23,336

#42

14:00

20,022

#33

14:16

5,507

#8

14:33

5,821

#15

14:49

7,058

#101

15:05

5751

#69

15:21

5480

#F140

15:41

6438

#37

16:04

5757

#10

16:20

6389

136.92

115-84	START TIME	GC/15 min
#60	10:47	12,260
#30	11:05	21,778
#77	11:22	8,677
#4	11:42	6,093
#51	11:59	12,248
#40	12:15	14,268
#F133	12:31	5,538
#31	13:01	4,364
#18	13:20	11,898
#F146	13:36	5,935
#132	13:52	21,163
#17	14:08	19,549
#F139	14:25	16,301



DISTRICT SIX POLK COUNTY HEALTH DEPARTMENT

WILLIAM F. HILL, JR., M.D.
DIRECTOR

P.O. BOX 1480
229 AVENUE D, N.W.
WINTER HAVEN, FLORIDA
33880

Radiological and Occupational Health Section
813 294-7481 ext. 283

DIRECT SERVICE UNITS

1755 HOLLAND PKWY., SOUTH
BARTOW, FLORIDA 33830

111 NORTH 11TH STREET
HAINES CITY, FLORIDA 33844

DIRECT SERVICE UNITS

1333 NORTH FLORIDA AVENUE
LAKE LAND, FLORIDA 33801

305 WEST CENTRAL AVENUE
LAKE WALES, FLORIDA 33853

June 7, 1985

DSMA ATCON LTD.
4195 Dundas Street West
Toronto, Ontario
Canada MBX 1Y4

ATTN: ARTHUR SCOTT

Dear Mr. Scott:

As per your May 8, 1985, speedimemo concerning our office's billing DSMA Atcon Ltd. for the Brittany Place analyses, I am enclosing the yellow copy of your purchase order and our billing statement. This is the last copy of the purchase order that your agency provided to PCHU.

As per your memo if a new purchase order is required, please utilize the attached PCHU billing for processing as required by your Accounting Section.

Please be aware that this agency provides the analyses results and data upon the receipt of payment for such services. We will promptly provide all data per this policy.

If there are any problems with the above request or if any questions arise, please contact this office.

Sincerely,

Norman M. Gilley
Public Health Physicist Supervisor

ENC/2



DISTRICT SIX POLK COUNTY HEALTH DEPARTMENT

WILLIAM F. HILL, JR., M.D.
DIRECTOR

P.O. BOX 1460
229 AVENUE D, N.W.
WINTER HAVEN, FLORIDA
33880

RADIOLOGICAL AND OCCUPATIONAL HEALTH SERVICE
813 294-7481 ext 283

DIRECT SERVICE UNITS

1755 HOLLAND PKWY., SOUTH
BARTOW, FLORIDA 33830

111 NORTH 11TH STREET
HAINES CITY, FLORIDA 33844

DIRECT SERVICE UNITS

1333 NORTH FLORIDA AVENUE
LAKELAND, FLORIDA 33801

305 WEST CENTRAL AVENUE
LAKE WALES, FLORIDA 33853

INVOICE FOR LABORATORY SERVICES

Description: Brittany Place, Clower Road, Bartow, Fl.

Sampling required per site:

- 4 six foot deep composite soil samples
- 1 six foot deep, with 1 foot interval soil samples
- 12 flux measurements per site, two samplings on two different days
- 1 set of core samples individually bagged in one foot increments
- 1 soil moisture measurements taken at the same time as the flux measurements, two samplings per lot
- 10 Ra-226 analysis on the above soil samples

The above listing was performed at three Brittany Place S/D lots as per proposal of September 19, 1984.

PLEASE REMIT \$4,657.00 for the above services as per your request.

Attached: American Atcon Inc. P.O. 1823/1328/01

1105 NORTH MARKET STREET
P.O. BOX 1347
WILMINGTON, DELAWARE 19899

PURCHASE ORDER

PURCHASE ORDER NO

1823/1328/01

DATE

Oct. 11th, 1984

AMERICAN ATCON INC.

TO: District Six,
Polk County Health Department,
P. O. Box 1480,
229 Avenue D. N. W.,
Winter Haven, Florida
33880 U.S.A.

Attention: Donald R. Guthrie, PE

ENTER OUR ORDER FOR THE GOODS, MATERIALS AND/OR SERVICES AS LISTED BELOW AND IN ACCORDANCE WITH THE INSTRUCTIONS, TERMS AND CONDITIONS SET FORTH HEREUNDER.

ITEM NO.	QUANTITY	DESCRIPTION	UNIT PRICE		
		Soil survey on 3 lots at Brittany Place, Bartow, Florida, per methodology in letter of Sept. 19, 1984	\$4657.00 U.S.		
DATE TO BE SHIPPED		SHIP TO	SHIP VIA	F.O.B. POINT	TERMS

THIS ORDER SHALL NOT BE BINDING UNTIL ACCEPTED. VENDOR SHALL SIGNIFY ACCEPTANCE BY SIGNING AND RETURNING TO PURCHASER, THE ACKNOWLEDGMENT AND ACCEPTANCE COPY HEREOF.

THE VENDOR AGREES TO ALL TERMS AND CONDITIONS STATED HEREIN INCLUDING SUCH TERMS AND CONDITIONS AS MAY BE STIPULATED IF ANY.

THIS ORDER SHALL CONSTITUTE THE COMPLETE AND FINAL AGREEMENT BETWEEN PURCHASER AND VENDOR AND NO OTHER AGREEMENT SHALL BE BINDING UPON THE PURCHASER UNLESS MADE IN WRITING AND SIGNED BY THE PURCHASER'S AUTHORIZED REPRESENTATIVE.

AB1-40


AUTHORIZED REPRESENTATIVE



DISTRICT SIX POLK COUNTY HEALTH DEPARTMENT

WILLIAM F. HILL, JR., M.D.

DIRECTOR

P.O. BOX 1460

229 AVENUE D, N.W.

WINTER HAVEN, FLORIDA

33880

Radiological and Occupational Health Section
813 294-7481 ext. 283

DIRECT SERVICE UNITS

1755 HOLLAND PKWY., SOUTH
BARTOW, FLORIDA 33830

111 NORTH 11TH STREET
MAINE CITY, FLORIDA 33844

DIRECT SERVICE UNITS

1333 NORTH FLORIDA AVENUE
LAKELAND, FLORIDA 33801

305 WEST CENTRAL AVENUE
LAKE WALES, FLORIDA 33853

June 7, 1985

DSMA ATCON LTD.
4195 Dundas Street West
Toronto, Ontario
Canada MBX 1Y4

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As per your May 8, 1985, speedimemo concerning our office's billing DSMA Atcon Ltd. for the Brittany Place analyses, I am enclosing the yellow copy of your purchase order and our billing statement. This is the last copy of the purchase order that your agency provided to PCBU.

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Please be aware that this agency provides the analyses results and data upon the receipt of payment for such services. We will promptly provide all data per this policy.

If there are any problems with the above request or if any questions arise, please contact this office.

Sincerely,

Norman M. Gilley
Public Health Physicist Supervisor

ENC/2



DISTRICT SIX POLK COUNTY HEALTH DEPARTMENT

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RADIOLOGICAL AND OCCUPATIONAL HEALTH SERVICE
813 294-7481 ext 283

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- 1 soil moisture measurements taken at the same time as the flux measurements, two samplings per lot
- 10 Ra-226 analysis on the above soil samples

The above listing was performed at three Brittany Place S/D lots as per proposal of September 19, 1984.

PLEASE REMIT \$4,657.00 for the above services as per your request.

Attached: American Atcon Inc. P.O. 1823/1328/01

1105 NORTH MARKET STREET
P.O. BOX 1347
WILMINGTON, DELAWARE 19888

PURCHASE ORDER

PURCHASE ORDER NO
1823/1328/01

DATE
Oct. 11th, 1984

AMERICAN ATCON INC.

TO: District Six,
Polk County Health Department,
P. O. Box 1480,
229 Avenue D. N. W.,
Winter Haven, Florida
33880 U.S.A.

Attention: Donald R. Guthrie, PE

ENTER OUR ORDER FOR THE GOODS, MATERIALS AND/OR SERVICES AS LISTED BELOW AND IN ACCORDANCE WITH THE INSTRUCTIONS, TERMS AND CONDITIONS SET FORTH HEREUNDER.

ITEM NO.	QUANTITY	DESCRIPTION	UNIT PRICE		
		Soil survey on 3 lots at Brittany Place, Bartow, Florida, per methodology in letter of Sept. 19, 1984	\$4657.00 U.S.		
DATE TO BE SHIPPED		SHIP TO	SHIP VIA	F.O.B. POINT	TERMS

THIS ORDER SHALL NOT BE BINDING UNTIL ACCEPTED. VENDOR SHALL SIGNIFY ACCEPTANCE BY SIGNING AND RETURNING TO PURCHASER, THE ACKNOWLEDGMENT AND ACCEPTANCE COPY HEREOF.

THE VENDOR AGREES TO ALL TERMS AND CONDITIONS STATED HEREIN INCLUDING SUCH TERMS AND CONDITIONS AS MAY BE STIPULATED IF ANY.

THIS ORDER SHALL CONSTITUTE THE COMPLETE AND FINAL AGREEMENT BETWEEN PURCHASER AND VENDOR AND NO OTHER AGREEMENT SHALL BE BINDING UPON THE PURCHASER UNLESS MADE IN WRITING AND SIGNED BY THE PURCHASER'S AUTHORIZED REPRESENTATIVE.

A81-40


AUTHORIZED REPRESENTATIVE

OCT 12 1984

AMERICAN ATCON INC.

1108 NORTH MARKET STREET
P.O. BOX 1347
WILMINGTON, DELAWARE 19899

October 5th, 1984

Department of Health and
Rehabilitative Services,
Polk County Health Department,
P.O.Box 1480,
WINTER HAVEN, Florida, 33880
USA

Attention: Mr. Donald R. Guthrie, P.Eng.
Director of Environmental Engineering.

Dear Mr. Guthrie:

Thank you for your letter of September 19th. I will send you a purchase order of \$4,657.00 for your proposed soil sampling program. Al Pfundt of U.S. Steel Realty will inform you of the location of these lots on 'Brittany Place', and will give you written permission to enter the property to take samples.

I would like to retain the soil samples, for I might wish to carry out additional measurements on them at a later date.

Thank you



A.G. Scott,
AGS/um

cc: Mr. A. Pfundt, USS
Mr. R. Clarke, FIRR

NOV 6 1984



OFFICE OF THE ASSISTANT SECRETARY FOR
COMMUNITY PLANNING AND DEVELOPMENT
OFFICE OF ENVIRONMENT AND ENERGY

FLORIDA INSTITUTE
OF
PHOSPHATE RESEARCH

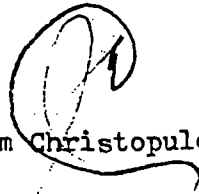
1984 DEC 17 PM 12:40
14 December 1984

Ray:

A copy of Arthur Scott's letter is enclosed.

Hope to have an understanding with EPA on the issue by the
end of next week.

I'll be talking to you. The name of the game is to keep
the ball rolling.



Jim Christopoulos

November 23, 1984

Mr. J. L. Christopulos,
Deputy Director
Environmental Planning Division
Department of Housing and Urban Development
451 Seventh St. S.W.
WASHINGTON, D.C. 20410
U.S.A.

Dear Mr. Christopulos:

I have considered the EPA "Suggestions for Radon-Resistant Housing Features" for the Florida phosphate lands demonstration. I agree with the proposed criteria - i.e. the systems should be as passive as possible, require minimum maintenance, remain effective for the life time of the structure, and should not be affected by the expected degradation of the structure with time. Given the nature of this project, I would like to add the criteria that the systems selected should have a high probability of success and that they should not significantly affect the saleability of the house.

A sealed monolithic slab will be an invisible system to any purchaser, and so meets all the criteria. A suspended floor with large ventilation areas for the sub-floor space can, I believe, be produced in Florida at a reasonable cost without major effects on the appearance and saleability, so that system seems as if it will meet the criteria.

The conventional foundation with sub-slab ventilation is a system that causes me some concern. These systems are successful in Canada in reducing radon daughter concentrations but they are not passive systems. Any effective soil ventilation system has to compete with the pressure differences produced by the house, and experience is that this cannot be done reliably by passive methods, which in essence use those same pressure differences. There are several hundred houses with active systems in Elliot Lake, but the houses are owned by the mining companies and rented to miners. The presence of a fan is not a handicap under those circumstances. However the builder, developer, and myself all feel that an 'anti-radon fan' on a house in Florida at this time would make that house virtually unsaleable. Certainly in this project, any prospective buyer can actually cross the road and purchase a completely standard house.

The situation is then, if we build a house that relies on soil ventilation alone to exclude radon, the system will have to work passively or else the house will be unsaleable. If the system does not work well enough to meet the WL criterion, the house will be unsaleable, for FHA mortgage insurance will not be available. I do not know if it is possible to build an effective passive sub-slab ventilation system for a conventional Florida foundation, so it seems to me that there is too much risk associated with this concept for it to be used in a commercial demonstration project. I would regard this

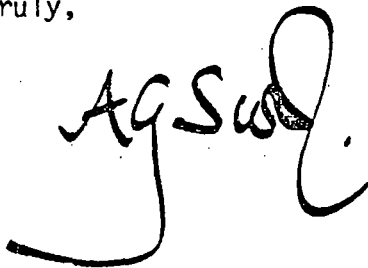
as suitable for an experimental program, where ~~their~~ financial burdens of failure would be borne by the experimenter.

The question of the utility of passive soil ventilation systems in Florida is clearly of major interest. I propose that we incorporate a small experimental component into the demonstration program. If we construct a monolithic slab house with a soil ventilation system, and delay sealing the service entries through the slab, we can measure radon concentrations in the house with and without the system operative, and then seal the openings. We can expect good performance from a sealed slab regardless of the performance of the soil-ventilation system, so the risks associated with this course of action are minimal. The only penalties are those of extending the measurement period to measure system off, system on, floor sealed, etc., which are acceptable.

I would propose that the foundation designs to be constructed should be:

- (1) Plain monolithic slab sealed during construction;
- (2) Monolithic slab with soil ventilation - sealing delayed till after soil ventilation testing;
- (3) Suspended floor with passive sub-floor ventilation.

Yours very truly,



A.G. Scott

AGS:dgt

cc: Ray Clark, FIPR.

RADON FLUX RATE MEASUREMENTS
picoCuries per meter squared per minute

NOVEMBER 30, 1984



120	180	282	90
150	192	162	120
144	120	109	102

CLOWER ROAD BARTOW, FLORIDA

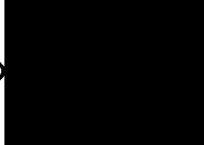
NOVEMBER 30, 1984



120	180	282	90
150	192	162	120
144	120	109	102

CLOWER ROAD BARTOW, FLORIDA

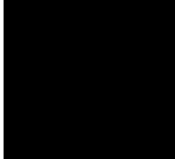
Proposed \$ increases in

Ra-226 TEST (soil) →  / sample

increase due to: drying
mixing
ashing
wear & tear on
crucibles

Ra-226 (H₂O) same
Ra-228 (H₂O) same

GROSS C & B same

SPIL Sampling (BORINGS)  6 ft core

If this is the first time you've used dBASE II LESSONS, select the 1 option from the menu below. This introduction contains background material on computers, operating systems, and dBASE II.

If this is not the first time you've used dBASE II LESSONS, select the appropriate lesson number (or QUIT) from the menu below.

- 1 - Introduction, definitions of basic computer terms (reference, not interactive)
- 2 - Create files, generate Reports, and correct syntax errors
- 3 - Add, change, and delete data in files, and record positioning
- 4 - Selecting sub-sets of data in files, and computations
- 5 - Record keys, indexing, random processing, and Boolean operators
- 6 - File and system utilities, and intro to command procedures
- 7 - Sorting, updating, and use of memory
- 8 - Relational data base construction
- 9 - Other forms of accepting and displaying data, dBASE II functions, and GET options
- 10 - Building custom reports and screens
- 11 - Command procedures (programming features in dBASE II)
- QUIT - In response to any prompt, to return to the operating system

ENTER THE LESSON NUMBER:

You must have received several diskettes for dBASE II LESSONS. Insert the diskette which contains lesson 5 into another disk drive (not the one you started dBASE II on). I'll wait while you do that.

WAITING

Now, tell me which disk drive contains lesson 5, and press the <RETURN> key.

WHICH DISK DRIVE CONTAINS LESSON 5? B

In lesson 4, MICHAEL, you learned about record keys, and their use with the INDEX and FIND commands. You also learned how to use LOCATE and CONTINUE for small files which were not indexed on a key.

In lesson 5, you're going to learn about some of the dBASE II file utility functions, a way to tell dBASE II that a new diskette has been placed in a disk drive (perhaps to back-up a file, like you'll do in this lesson), and finally, you'll see how to execute commands from disk, rather than entering them on the keyboard.

WAITING

Remember in lesson 3, you had a file which contained payroll information for some of the people in the White House. If there is important information, this is it. Right? The janitor thinks so. I saved that file for this lesson too.

I called the file COMPUTE. We can see if it's still there with the DISPLAY FILE command. This command displays the file names for dBASE II files (and other files too) on disk.

WAITING

Type DISPLAY FILE <RETURN>

DISPLAY FILE

DATABASE FILES	#	RCOS	LAST UPDATE
TUTNABK DBF	00008		03/00/00
COMPUTE DBF	00004		03/00/00
EMPPAK DBF	00007		03/00/00
DBF	00006		00/00/00
COMPUTE1 DBF	00000		00/00/00
AST DBF	00007		00/00/00
AK DBF	00003		00/00/00
DBF	00007		00/00/00
DBF	00008		00/00/00
DBF	00000		00/00/00

EMPTRANS DBF	00003	00/00/00
JOINJOB DBF	00008	00/00/00
JOINPAY1 DBF	00007	00/00/00
JOINPAY2 DBF	00007	00/00/00
JOINPAY3 DBF	00007	00/00/00
F DBF	00008	00/00/00

Now, MICHAEL, start working with the file COMPUTE.

Type USE COMPUTE <RETURN>
USE COMPUTE

You didn't enter:

USE COMPUTE

If you would like to try to correct the statement, enter Y when prompted. Otherwise, enter N, and then re-enter the entire command.

CORRECT AND RETRY (Y/N):N

Please enter:

USE COMPUTE <RETURN>

USE COMPUTE

Type DISPLAY ALL <RETURN>

DISPLAY ALL

00001	PRESIDENT	75200	2000	6	0	0
00002	VICE-PRES	63600	1500	4	0	0
00003	SEC-STATE	56000	1250	3	0	0
00004	JANITOR	99000	2500	1	0	0

WAITING

This is definitely important data. You wouldn't want to lose it.

To make sure that you don't lose the data, you're going to back-up COMPUTE. Essentially, what this amounts to is that you going to create a COPY of the file. Normally, the back-up copy would be made on a different diskette (other than the one the file is on), but since we're just demonstrating how a back-up is done, you'll put the back-up on the same disk as the file.

In a real back-up situation, where a different diskette is used to receive the file, the RESET command should be issued. This tells the system that a disk swap has occurred, and will eliminate the possibility of a disk error occurring.

WAITING

Phosphogypsum "Test" Road - Polk County

A gamma survey was conducted on Friday, October 19, 1984, by Kay Heath, Office of Radiation Control, and Lee Forgey, Polk County Public Health Unit, to determine the initial condition of Parrish Road. Parrish Road is the site chosen to be used in the phosphogypsum road study. It is located about one mile east of Fort Meade, off U.S. 98, county road #250101.

The survey started at the corner of Keller and Parrish Roads, extended the distance of 1.54 miles and ended at U.S. 98 and Parrish Road. Readings were taken approximately every 210 feet to 300 feet, in the center of the road, using the utility poles as markers.

The average mean was 12.91 μ R/hr with a standard deviation of 3.06.

The road, at this time, is classified by the Polk County engineering department as an unpaved clay road.

Prepared by:

Kay Heath

Kay Heath
Public Health Physicist
Environmental Radiation Control

cc: William C. Kenley, Polk County
Abner Coker, Polk County
Michael Gilley, Polk County

Ray Heath DHRS
Lee Forgey PCHD
Friday 10-19-84
1010

Surveyed Parrish Rd. starting at the corner of Parrish and Keller Rd.,
using utility pole as guide. Stopped at Parrish Rd. and U.S. 98 - Fort
Meade area 1.54 mile long .

		<u>$\mu R/hr$</u>
Parrish Rd. & Keller Rd.	Ludlum - 2220	
	33220	14.70
5-123-1 utility pole	26595	12.6
5-123-2	28399	13.19
5-123-3 Corner(White house black trim)	23169	11.48
	21216	10.84
5-123-4	15552	8.99
5-123-5	22270	11.18
5-123-6	17394	9.59
5-123-7	16543	14.72
5-123-8	18734	10.03
5-123-8A	27611	12.93
5-123-9	22345	11.21
5-123-9A	15767	9.06
5-123-10	18395	9.92
5-123-11	21711	11.0
	25701	12.30
Parrish Rd. & dirt road - No sign	29000	13.38
	29971	13.7
5-123-12-2	28951	13.37
5-123-12-3	28420	13.19
5-123-12-4	24125	11.79
5-123-12-5	25309	12.18
5-123-12-6	32591	14.56
5-123-12-7	50222	23.63
5-123-12-8	43990	18.28
5-123-12-9	27973	13.05
5-123-12-10	42083	17.66

Next pole no. #
Parrish Rd. & U.S. 98 over pavement
on dirt - grave side entrance

$$n = 27$$

$$\bar{x} = 12.91$$

$$S = 3.12$$

$$\sigma = 3.06$$



DISTRICT SIX POLK COUNTY HEALTH DEPARTMENT

WILLIAM F. HILL, JR., M.D.
DIRECTOR

P.O. BOX 1440
229 AVENUE D, N.W.
WINTER HAVEN, FLORIDA
33880

Radiological and Occupational Health Section
813 294-7481 ext. 283

DIRECT SERVICE UNITS

1755 HOLLAND PKWY., SOUTH
BARTOW, FLORIDA 33830

111 NORTH 11TH STREET
HAINES CITY, FLORIDA 33844

DIRECT SERVICE UNITS

1333 NORTH FLORIDA AVENUE
LAKELAND, FLORIDA 33801

305 WEST CENTRAL AVENUE
LAKE WALES, FLORIDA 33853

June 7, 1985

DSMA ATCON LTD.
4195 Dundas Street West
Toronto, Ontario
Canada MBX 1Y4

ATTN: ARTHUR SCOTT

Dear Mr. Scott:

As per your May 8, 1985, speedimemo concerning our office's billing DSMA Atcon Ltd. for the Brittany Place analyses, I am enclosing the yellow copy of your purchase order and our billing statement. This is the last copy of the purchase order that your agency provided to PCHU.

As per your memo if a new purchase order is required, please utilize the attached PCHU billing for processing as required by your Accounting Section.

Please be aware that this agency provides the analyses results and data upon the receipt of payment for such services. We will promptly provide all data per this policy.

If there are any problems with the above request or if any questions arise, please contact this office.

Sincerely,

Norman M. Gilley
Public Health Physicist Supervisor

ENC/2

REDACTED

DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES STATE OF FLORIDA

Bob Cramm, Governor



DISTRICT SIX POLK COUNTY HEALTH DEPARTMENT

WILLIAM F. HILL, JR., M.D.
DIRECTOR

DIRECT SERVICE UNITS

1755 HOLLAND PKWY., SOUTH
BARTOW, FLORIDA 33830

111 NORTH 11TH STREET
HAINES CITY, FLORIDA 33844

P.O. BOX 1460
229 AVENUE D, N.W.
WINTER HAVEN, FLORIDA

33880

RADIOLOGICAL AND OCCUPATIONAL HEALTH SERVICE
813 294-7481 ext 283

DIRECT SERVICE UNITS

1333 NORTH FLORIDA AVENUE
LAKELAND, FLORIDA 33801

305 WEST CENTRAL AVENUE
LAKE WALES, FLORIDA 33853

INVOICE FOR LABORATORY SERVICES

Description: Brittany Place, Clower Road, Bartow, Fl.

Sampling required per site:

- 4 six foot deep composite soil samples
- 1 six foot deep, with 1 foot interval soil samples
- 12 flux measurements per site, two samplings on two different days
- 1 set of core samples individually bagged in one foot increments
- 1 soil moisture measurements taken at the same time as the flux measurements, two samplings per lot
- 10 Ra-226 analysis on the above soil samples

The above listing was performed at three Brittany Place S/D lots as per proposal of September 19, 1984.

PLEASE REMIT \$4,657.00 for the above services as per your request.

Attached: American Atcon Inc. P.O. 1823/1328/01

A handwritten signature in black ink, appearing to be 'J. Hill', located in the bottom right corner of the document.

1105 NORTH MARKET STREET
PO BOX 1347
WILMINGTON, DELAWARE 19899

PURCHASE ORDER

PURCHASE ORDER NO

1823/1328/01

DATE

Oct. 11th, 1984

AMERICAN ATCON INC.

TO: District Six,
Polk County Health Department,
P. O. Box 1480,
229 Avenue D. N. W.,
Winter Haven, Florida
33880 U.S.A.

Attention: Donald R. Guthrie, PE

ENTER OUR ORDER FOR THE GOODS, MATERIALS AND/OR SERVICES AS LISTED BELOW AND IN ACCORDANCE WITH THE INSTRUCTIONS, TERMS AND CONDITIONS SET FORTH HEREUNDER.

ITEM NO.	QUANTITY	DESCRIPTION	UNIT PRICE	
		Soil survey on 3 lots at Brittany Place, Bartow, Florida, per methodology in letter of Sept. 19, 1984	\$4657.00 U.S.	
DATE TO BE SHIPPED	SHIP TO	SHIP VIA	F.O.B. POINT	TERMS

THIS ORDER SHALL NOT BE BINDING UNTIL ACCEPTED. VENDOR SHALL SIGNIFY ACCEPTANCE BY SIGNING AND RETURNING TO PURCHASER, THE ACKNOWLEDGMENT AND ACCEPTANCE COPY HEREOF.

THE VENDOR AGREES TO ALL TERMS AND CONDITIONS STATED HEREIN INCLUDING SUCH TERMS AND CONDITIONS AS MAY BE STIPULATED IF ANY.

THIS ORDER SHALL CONSTITUTE THE COMPLETE AND FINAL AGREEMENT BETWEEN PURCHASER AND VENDOR AND NO OTHER AGREEMENT SHALL BE BINDING UPON THE PURCHASER UNLESS MADE IN WRITING AND SIGNED BY THE PURCHASER'S AUTHORIZED REPRESENTATIVE.


AUTHORIZED REPRESENTATIVE

SEND
TO

J. G. Guthrie, Polk County.

FROM

A. G. Scott

DEPT.

DATE

8 May 1985

SUBJECT

Re Soil Samples.

I am sorry about the delays on this. I am (and have been) expecting a contract approval from FIPR for this at the end of the month, but their paperwork takes so long that I have been hoping since Jan. I believe that I will get approval in 1 June, so will pay

REPLY

this off then. To comply with the paperwork requirements I may have to send you another purchase order within the contract dates. I had no idea when I sent you the P.O. that things would take so long.

Regards, YRS

A. G. Scott

P.S. I have a box of soil samples, but I haven't had any other results.

REPLY FROM

REPLY DATE

AVOID
VERBAL
INSTRUCTIONS

USE A
← SPEEDIMEMO →

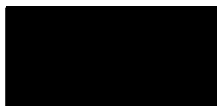
MACKENZIE & BEST LTD. 4S085E

TO WRITE: HANDWRITE OR TYPE. REMOVE AND RETAIN
YELLOW COPY. FORWARD BALANCE OF SET.

▶ FOLD AT MARKS FOR USE IN #9 OR #10 WINDOW ENVELOPE ◀

TO REPLY: WRITE REPLY IN BOTTOM
AREA. SNAP SET APART.
RETAIN ORIGINAL AND RETURN PINK COPY.

$$8.7 \pm 4.3$$



5.3	14.8
* ¹	
5.6	11.6

* ¹	0-1	6.1	
	1-2	11.6	
	2-3	3.8	
	3-4	3.5	
	4-5	8.6	
	5-6	3.5	
		<u>6.12</u>	3.3

$$10 \pm 3.7$$



7.9	5.2
* ²	
9.9	14.8

* ²	0-1	8.0	
	1-2	15.7	
	2-3	21.7	
	3-4	6.1	
	4-5	4.2	
	5-6	17.4	
		<u>12.18</u>	7.05
		2	

$$4.1 \pm 0.6$$



5.0	3.6
* ³	
4.2	4.3

* ³	0-1	6.8	
	1-2	2.9	
	2-3	2.2	
	3-4	3.1	
	4-5	3.3	
	5-6	2.7	
		<u>3.5</u>	1.7

Blank Sample

Below detectable limits

Blind
EMSL LV ~~Blank~~ Sample

Before

Date sample prepared - 10/22/84

Date Ra-226 analysis begun - 11/19/84

PCHD Reported results (pCi/l) - 2.8, 2.8, 2.9

Known value (pCi/l) - 3.0

Deviation from the known (S.D.) - .6

After



Proposed Residential Construction, FIPR - USS

The Florida Institute of Phosphate Research (FIPR) has proposed to fund construction of three homes in Polk County for purposes of testing those homes for radiation. These would be built on reclaimed land, lots owned by USS AgriChemicals Realty Development. When completed, various parameters would be checked to help define exposure of residents to radiation as a result, in part, of living on reclaimed land. Construction has not begun.

On September 12, 1984, two persons from the Environmental Radiation Control Section, Department of Health & Rehabilitative Services, toured the site, accompanied by an FIPR representative. The three vacant lots are adjacent to one another, on the north side of Clower Road in Bartow, about one block east of SR-555. Numerous other homes are being, or have been, built in the area. The land has been reclaimed by USS AgriChemicals. At this time, the lots have not been staked out, but several gamma measurements were made on the lots.

The surface of the lots is composed of about two feet of sand tailings. On one lot, this surface material had been removed over about a 20-square foot area, exposing the underneath fill. The following measurements were obtained:

<u>3 feet above lot level</u>	-	17.1 ur/hr	<u>Crown of paved road</u> - 23.6
		14.3	
		14.5	
		15.4	
		15.4	
		13.2	
		13.3	
	Mean -	<u>14.7</u>	
<u>3 feet above "scooped"</u>			<u>Across road</u> - 16.6 - 27.6
<u>level</u>	-	25.7	
		25.0	
		24.2	
	Mean -	<u>25.0</u>	

Proposed Residential
Construction, FIPR - USS

Page 2

It is suggested that once the lots are surveyed, OPRCE should do soil testing and gamma measurements prior to the start of construction.

Prepared by:

Gordon D. Nifong, Ph.D.
Public Health Physicist
Supervisor
Environmental Radiation Control
Office of Radiation Control

PROPOSED RESIDENTIAL CONSTRUCTION, FIPR-USS

(Follow-Up)

On September 25, 1984, a second survey of external gamma radiation was conducted at three lots in the Bartow, Florida, area. These are lots developed by USS Agri-Chemicals Realty on reclaimed land, on which test homes are to be constructed for radiation monitoring, partially financed by the Florida Institute of Phosphate Research. The lots are on the north side of [REDACTED], about one [REDACTED] of SR-555. The lots have been staked out since an earlier visit on September 12. From the west, lot [REDACTED] is about 90' x 130' and is adjacent to lot [REDACTED] about 110' x 130'. Next is an access of some 55' wide, then lot [REDACTED] on the east side, 90' x 130'. Dimensions are approximate; please refer to attached diagram. The surface of the lots is composed of one to two feet of sand tailings fill, over reclaimed land. Gamma measurements were taken at 30-foot intervals to "grid" the area. All readings were taken three feet above ground. Some 65 measurements were made.

The range of gamma levels found was 10.9 to 23.8 uR/hour. The mean was 15.6 uR/hr. Fifty-five of the 65 measurements were between 14 and 17 uR/hr.

A next procedure might be soil sampling for radium content. This should be coordinated with FIPR, American Atcom, and the Polk County Health Unit.

A sketch of the lots and all gamma measurements made on Sept. 25th are presented on the attached figure.

Prepared by:

Gordon D. Nifong, Ph.D.
Public Health Physicist
Supervisor
Environmental Radiation Control
Office of Radiation Control

BARTON, FL
FIPR-USS
HLR/LR.

Cadlam 2220

9/25/84

$\bar{x} = 15.6$

$R = 10.9 - 23.8$

N
↑

50'

23
90'

24
110'

25
90'

	17.2	16.9	16.8	16.6	16.6	16.7	15.3	15.3	15.2	15.0	15.0	17.0	14.8
	16.8	16.3	16.4	16.0	16.4	18.0	15.1	15.3	15.1	16.2	15.2	16.3	14.7
130'	16.8	16.4	16.7	15.2	17.6	17.0	15.5	14.6	15.2	15.1	14.9	15.0	14.4
	ACCESS												
	15.2	17.4	17.3	13.9	17.1	14.3	15.0	14.8	15.9	17.0	15.3	13.2	12.5
	16.2	23.8	15.9	14.8	12.6	12.3	12.5	13.6	14.3	18.9	14.6	17.4	10.9



PROPOSED RESIDENTIAL CONSTRUCTION - FIPR - USS

(second follow-up)

On October 29, 1984, a third visit was made to three lots in the Bartow, Florida, area on which the Florida Institute of Phosphate Research and USS Realty propose to build three test homes to monitor potential radiation exposure. Earlier, on September 25, gamma surveys had been made by the Environmental Radiation Control section of the Florida Department of Health and Rehabilitative Services on lots [REDACTED] of Brittany Place on [REDACTED]. FIPR had indicated these to be the test lots. However, on the Oct. 29th date, it was learned from USS Realty that actually the three test lots were [REDACTED]. As personnel from the Environmental Radiation Control section were surveying the area for other purposes on the 29th, a gamma survey was made over [REDACTED].

Lot [REDACTED] is approximately 90 feet wide by 130 feet deep. Readings were taken three feet above ground at 30-foot intervals. Twenty measurements were taken. These are shown on the attached chart. The range of values found was 14 to 18 uR/hr, with a mean of 16 uR/hr.

Prepared by:



Gordon D. Nifong, Ph.D.
Public Health Physicist
Supervisor

Environmental Radiation Control
Office of Radiation Control

Attachment

OPRCE/11-84

BARTON, FL

FIPR-USS

NR/LR

Ludlum 3

10/29/84

$\bar{x} = 16$

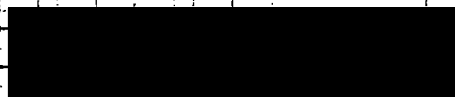
R-14-18

N
↑

← 50' →

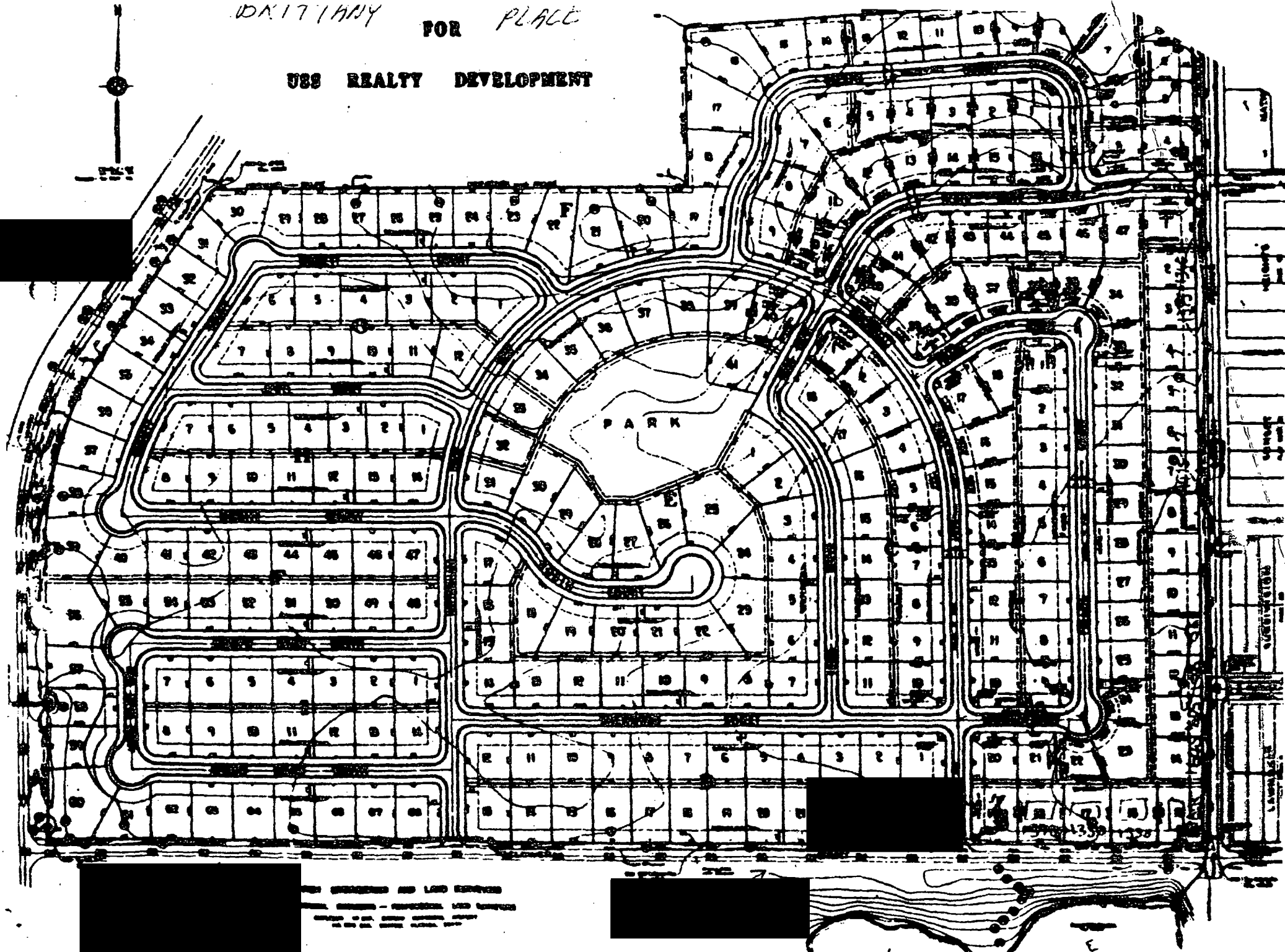
2L

16.5	16.0	16.5	17.0
16.0	16.5	16.5	17.0
16.0	15.5	18.0	17.0
16.5	15.0	15.5	15.0
15.0	14.0	14.5	16.0



DA 1714NY FOR PLACE

USS REALTY DEVELOPMENT



FOR INFORMATION AND LAND SERVICES
PLANNING DIVISION - FEDERAL LAND SERVICE
WASHINGTON, D.C. 20250
DATE: 10/10/68